What is claimed:

1. A collision energy-absorbing device for mounting between a frame assembly of a motor vehicle and a bumper beam at one end of the motor vehicle, said collision energy-absorbing device comprising:

a substantially tubular body member configured to be operatively connected between the vehicle frame assembly and the bumper beam, said body member being constructed and arranged to collapse as said bumper beam and said vehicle frame assembly are moved relatively toward one another during a vehicle collision;

said body member having a substantially tubular first telescoping portion and a substantially tubular second telescoping portion, said first and second telescoping portions being connected by a connecting portion, said first and second telescoping portions having different cross-sectional dimensions configured to enable said first and second telescoping portions to move one within the other into collapsing telescoping relation as said body member collapses with said connecting portion being deformed and received between said first and second telescoping portions;

said body member further including one or more protrusions extending from one of said first and second telescoping portions, said protrusions being configured to interfere with relative movement of the other of said first and second telescoping portions as said body member collapses to thereby retard movement of said first and second telescoping portions one within the other into said telescoping relation.

2. A collision energy-absorbing device according to claim 1, wherein said protrusions are provided in said telescoping portion having a smaller cross-sectional dimension.

3. A collision energy-absorbing device according to claim 1, wherein said protrusions extend substantially along a longitudinal length of said one of said first and second telescoping portions.

4. A collision energy-absorbing device according to claim 1, wherein said body member further includes one or more perforations formed through said connecting portion to thereby weaken said connecting portion.

5. A collision energy-absorbing device according to claim 4, wherein said one or more perforations are formed through at least one corner of said connecting portion.

6. A collision energy-absorbing device according to claim 5, wherein said perforation is a circular hole.

7. A collision energy-absorbing device according to claim 1, wherein said body member is hydroformed from a tubular metal blank.

8. A collision energy-absorbing device according to claim 1, wherein the tubular body member is connected directly to the bumper beam.

9. A collision energy-absorbing device according to claim 1, wherein the tubular body member is formed integrally with a single frame rail of said vehicle frame assembly.

10. A collision energy-absorbing device according to claim 1, wherein the tubular body member is formed separately from a single frame rail of the vehicle frame assembly and then mounted to an end of the rail.

11. A collision energy-absorbing device according to claim 1, wherein said tubular body member includes a substantially tubular third telescoping portion,

said second and third telescoping portions being connected by another connecting portion opposite the first telescoping portion, said second and third telescoping portions having different cross-sectional dimensions configured to enable said second and third telescoping portions to move one within the other into collapsing telescoping relation as said body member collapses with said connecting portions being deformed and received between said second and third telescoping portions.

12. A collision energy-absorbing device according to claim 11, wherein said first and third telescoping portions are longitudinal end portions of said body member and said second telescoping end portion is an intermediate longitudinal portion of said body member extending between said end portions.

13. A collision energy-absorbing device according to claim 12, wherein said body member further includes another one or more protrusions extending from one of said second and third telescoping portions, said protrusions being configured to interfere with relative movement of the other of said second and third telescoping portions as said body member collapses to thereby retard movement of said second and third telescoping portions one within the other into said telescoping relation.

14. A collision energy-absorbing device according to claim 13, wherein said protrusions are provided on said intermediate portion.

15. A collision energy-absorbing device according to claim 14, wherein said protrusions extend substantially along a longitudinal length of said intermediate portion.

16. A collision energy-absorbing device according to claim 11, wherein said body member further includes one or more perforations formed through said connecting portions to thereby weaken said connecting portions.

17. A collision energy-absorbing device according to claim 16, wherein said one or more perforations are formed through at least one corner of said connecting portions.

18. A collision energy-absorbing device according to claim 17, wherein said perforation is a circular hole.

19. A collision energy-absorbing device according to claim 11, wherein said body member is hydroformed from a tubular metal blank.

20. A collision energy-absorbing device according to claim 11, wherein said tubular body is connected directly to the bumper beam.

21. A collision energy-absorbing device according to claim 11, wherein the tubular body is formed integrally with a single frame rail of said vehicle frame assembly.

22. A collision energy-absorbing device according to claim 11, wherein the tubular body is formed separately from a single frame rail of the vehicle frame assembly and then mounted to the end of the rail.

23. A collision energy-absorbing device according to claim 13, wherein each of said end portions have a greater diametrical dimension than

said intermediate portion so that during the collapsing of said collision energy-absorbing device the connecting portions deform so as to allow said intermediate portion to move in collapsing telescoping relation within said end portions.

24. A collision energy-absorbing device according to claim 1, further comprising a lost motion connecting structure carried on the body member for connection to the bumper beam, the lost motion connecting structure configured and positioned to allow the bumper beam to move relatively away from the body member during an offset collision laterally opposite the device.

25. A collision energy-absorbing device according to claim 24, wherein the lost motion connecting structure includes a hinge plate assembly having a first mounting plate and a second mounting plate pivotally connected by a hinge, one of the first and second mounting plates being connected to the body member and the other of the first and second mounting plates being connected to the bumper beam,

wherein the hinge plate assembly is movable from a closed position in which the first and second mounting plates are adjacent one another to an open position in which the first and second mounting plates are pivoted relative to one another during the offset collision.

26. The combination comprising:

a motor vehicle having a frame assembly; and

a collision energy-absorbing system comprising:

a bumper beam; and

a collision energy-absorbing device including a substantially tubular body member configured to be operatively connected between the vehicle frame assembly and the bumper beam;

said body member being constructed and arranged to collapse as said bumper beam and said vehicle frame assembly are moved relatively toward one another during a vehicle collision;

said body member of said collision energy-absorbing device having a substantially tubular first telescoping portion and a substantially tubular second telescoping portion, said first and second telescoping portions connected by a connecting portion, said first and second telescoping portions having different cross-sectional dimensions configured to enable said first and second telescoping portions to move one within the other into collapsing telescoping relation as said body member collapses with said connecting portion being deformed and received between said first and second telescoping portions;

said body member further including one or more protrusions extending from one of said first and second telescoping portions, said protrusions being configured to interfere with relative movement of the other of said first and second telescoping portions as said body member collapses to thereby retard movement of said first and second telescoping portions one within the other into said telescoping relation.

27. The combination according to claim 26, further comprising a second collision energy-absorbing-device having a construction that is substantially identical to the aforesaid collision energy-absorbing device, said second collision energy-absorbing device configured to be operatively connected between the vehicle frame assembly and the bumper beam.

28. The combination according to claim 26, wherein said protrusions are provided in said telescoping portion having a smaller cross-sectional dimension.

29. The combination according to claim 26, wherein said protrusions extend substantially along a longitudinal length of said one of said first and second telescoping portions.

30. The combination according to claim 26, wherein said body member further includes one or more perforations formed through said connecting portion to thereby weaken said connecting portion.

31. The combination according to claim 30, wherein said one or more perforations are formed through at least one corner of said connecting portion.

32. The combination according to claim 31, wherein said perforation is a circular hole.

33. The combination according to claim 26, wherein said body member is hydroformed from a tubular metal blank.

34. The combination according to claim 26, wherein the tubular body member is connected directly to the bumper beam.

35. The combination according to claim 26, wherein the tubular body is formed integrally with a single frame rail of said vehicle frame assembly.

36. The combination according to claim 26, wherein the tubular body is formed separately from a single frame rail of the vehicle frame assembly and then mounted to an end of the rail.

37. The combination according to claim 26, wherein said tubular body member includes a substantially tubular third telescoping portion,

said second and third telescoping portions being connected by another connecting portion opposite the first telescoping portion, said second and third telescoping portions having different cross-sectional dimensions configured to enable said second and third telescoping portions to move one within the other into collapsing telescoping relation as said body member collapses with said connecting portions being deformed and received between said second and third telescoping portions.

38. The combination according to claim 37, wherein said first and third telescoping portions are longitudinal end portions of said body member and said second telescoping end portion is an intermediate longitudinal portion of said body member extending between said end portions.

39. The combination according to claim 38, wherein said body member further includes another one or more protrusions extending from one of said second and third telescoping portions, said protrusions being configured to interfere with relative movement of the other of said second and third telescoping portions as said body member collapses to thereby retard movement of said second and third telescoping portions one within the other into said telescoping relation.

40. The combination according to claim 39, wherein said protrusions are provided on said intermediate portion.

41. The combination according to claim 40, wherein said protrusions extend substantially along a longitudinal length of said intermediate portion.

42. The combination according to claim 37, wherein said body member further includes one or more perforations formed through said connecting portions to thereby weaken said connecting portions.

43. The combination according to claim 42, wherein said one or more perforations are formed through at least one corner of said connecting portions.

44. The combination according to claim 43, wherein said perforation is a circular hole.

45. The combination according to claim 26, wherein said body member is hydroformed from a tubular metal blank.

46. The combination according to claim 26, wherein said tubular body is connected directly to the bumper beam.

47. The combination according to claim 26, wherein the tubular body is formed integrally with a single frame rail of said vehicle frame assembly.

48. The combination according to claim 37, wherein the tubular body is formed separately from a single frame rail of the vehicle frame assembly and then mounted to the end of the rail.

49. The combination according to claim 39, wherein each of said end portions have a greater diametrical dimension than said intermediate portion so that during the collapsing of said collision energy-absorbing device the connecting portions deform so as to allow said intermediate portion to move in collapsing telescoping relation within said end portions.

50. The combination according to claim 26, further comprising a lost motion connecting structure carried on the body member for connection to the bumper beam, the lost motion connecting structure configured and

positioned to allow the bumper beam to move relatively away from the body member during an offset collision laterally opposite the device.

51. The combination according to claim 50, wherein the lost motion connecting structure includes a hinge plate assembly having a first mounting plate and a second mounting plate pivotally connected by a hinge, one of the first and second mounting plates being connected to the body member and the other of the first and second mounting plates being connected to the bumper beam,

wherein the hinge plate assembly is movable from a closed position in which the first and second mounting plates are adjacent one another to an open position in which the first and second mounting plates are pivoted relative to one another during the offset collision.

52. A collision energy-absorbing device for mounting between a frame assembly of a motor vehicle and a bumper beam at one end of the motor vehicle, said collision energy-absorbing device comprising:

a substantially tubular body member configured to be operatively connected between the vehicle frame assembly and the bumper beam, said body member being constructed and arranged to collapse as said bumper beam and said vehicle frame assembly are moved relatively toward one another during a vehicle collision;

said body member having a substantially tubular first telescoping portion and a substantially tubular second telescoping portion, said first and second telescoping portions connected by a connecting portion, said first and second telescoping portions having different cross-sectional dimensions configured to enable said first and second telescoping portions to move one within the other into collapsing telescoping relation as said body member collapses with said connecting portion being deformed and received between said first and second telescoping portions;

said body member further including one or more perforations formed through said connecting portion to thereby weaken said connecting portion.

53. A collision energy-absorbing device according to claim 52, wherein said one or more perforations are formed through at least one corner of said connecting portion.

54. A collision energy-absorbing device according to claim 52, wherein said perforation is a circular hole.

55. A collision energy-absorbing device according to claim 52, further comprising a lost motion connecting structure carried on the body member for connection to the bumper beam, the lost motion connecting structure configured and positioned to allow the bumper beam to move relatively away from the body member during an offset collision laterally opposite the device.

56. A collision energy-absorbing device according to claim 55, wherein the lost motion connecting structure includes a hinge plate assembly having a first mounting plate and a second mounting plate pivotally connected by a hinge, one of the first and second mounting plates being connected to the body member and the other of the first and second mounting plates being connected to the bumper beam,

wherein the hinge plate assembly is movable from a closed position in which the first and second mounting plates are adjacent one another to an open position in which the first and second mounting plates are pivoted relative to one another during the offset collision.

57. The combination comprising:

a motor vehicle having a frame assembly;

a pair of lost motion connecting structures each having a first mounting portion and a second mounting portion movably mounted to one another, the second mounting portions being connected to spaced lateral portions of the vehicle frame assembly; and

a bumper beam operatively connected to the first mounting portions of the lost motion connecting structures,

wherein the lost motion connecting structures are constructed and arranged such that during an offset collision proximate one of the lost motion connecting structures the first mounting portion of the other lost motion connecting structure moves relative to the second mounting portion to permit the portion of the bumper associated therewith to move relatively away from the frame assembly.

58. The combination according to claim 57, wherein each lost motion connecting structure includes a hinge plate assembly having a first mounting plate and a second mounting plate pivotally connected by a hinge, one of the first and second mounting plates being connected to the spaced lateral portions of the vehicle frame assembly and the other of the first and second mounting plates being connected to the bumper beam,

wherein the hinge plate assembly is movable from a closed position in which the first and second mounting plates are adjacent one another to an open position in which the first and second mounting plates are pivoted relative to one another during the offset collision.

59. The combination according to claim 57, further comprising a pair of collision energy-absorbing devices each including a substantially tubular body member configured to be operatively connected between the spaced lateral portions of the vehicle frame assembly and the second mounting portions of the lost motion connecting structures.

60. A pair of lost motion connecting structures for mounting between spaced lateral portions of a frame assembly of a motor vehicle and a bumper beam at one end of the motor vehicle, each lost motion connecting structure comprising:

a first mounting portion and a second mounting portion movably mounted to one another, the first mounting portions being operatively connected to the bumper beam and the second mounting portions being operatively connected to the spaced lateral portions of the vehicle frame assembly;

wherein the lost motion connecting structures are constructed and arranged such that during an offset collision proximate one of the lost motion connecting structures the first mounting portion of the other lost motion connecting structure moves relative to the second mounting portion to permit the portion of the bumper associated therewith to move relatively away from the frame assembly.

61. A lost motion connecting structure according to claim 60, wherein each lost motion connecting structure includes a hinge plate assembly having a first mounting plate and a second mounting plate pivotally connected by a hinge, one of the first and second mounting plates being connected to the spaced lateral portions of the vehicle frame assembly and the other of the first and second mounting plates being connected to the bumper beam,

wherein the hinge plate assembly is movable from a closed position in which the first and second mounting plates are adjacent one another to an open position in which the first and second mounting plates are pivoted relative to one another during the offset collision.